HURRICANES OF 1953

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GENERAL SUMMARY

The hurricane season of 1953 was about normal in the number of storms, with a total of eight. Four reached the coast of the United States, but only two of them were of hurricane force and these were not particularly severe. This resulted in only one death and damage estimated at about $6,000,000. Hurricane Carol did $1,000,000 damages to fishing craft along the New England coast and caused some destruction in the Canadian Provinces of Nova Scotia and New Brunswick. Edna caused quite a lot of damage at Bermuda, but no dollar estimates have been received.

In addition to the wind damage, storm Hazel, that crossed southern Florida October 9, produced heavy rains which added to the flooded conditions in the river valleys of central and northeastern Florida, but it was not possible to separate damage by the storm rains from the floods already existing from previous rains. The overall flood damage, principally in the Peace, Kissimmee, and St. Johns River Valleys, has been estimated at between 9 and 10 million dollars. In the upper St. Johns Valley, the flood was the worst of record, and Hazel was responsible for the last foot or two of the rise.

Six of the storms, Barbara, Carol, Dolly, Edna, Florence, and Gail, were of hurricane force at some time in their courses, while Alice and Hazel were less than hurricane force, but there seemed to be a general lack of sustaining power, and none of the storms was outstandingly violent. Several gained hurricane force for a time only to lose it while at sea, without apparent reason. Carol developed the strongest wind (estimated about 130 knots) while passing north of the Leeward Islands and Puerto Rico, but began to weaken by the time it reached the latitude of Bermuda. Another feature of this season's storms was their rather pronounced meridional movement which can be seen from a glance at the track chart (fig. 1). This shows the predominantly northerly movement, or recurvature at rather low latitudes, and the lack of westward zonal movement, especially west of Longitude 60° W; hence, no storm reached the western Gulf of Mexico during the season.

The warning and advisory service was of a high order and all land areas affected had ample warnings of the approaching storms. This doubtless reduced damages and casualties by allowing time for evacuations and protective measures. The total of 111 advisory and warning bulletins issued by the forecast centers concerned is about the same as that issued in 1952, and represents another relatively light season.

THE INDIVIDUAL HURRICANES

Alice, May 25–June 6.—The first storm of the season developed rather earlier than usual and did not attain hurricane strength. During the latter part of May, a large cold Low aloft drifted northward from the vicinity of Panama. On May 25, when this Low was centered east of the Nicaraguan coast, a weak warm-core surface center formed. Moving with the larger cyclonic circulation aloft, the surface Low made a counterclockwise loop over the Cape Gracias area during the 26th to 28th and lost force. Emerging from the loop, the storm deepened as it moved northward and then on June 1–2 described another loop north of the western end of Cuba in another counterclockwise movement with the upper level circulation. During this second loop, aircraft estimated maximum winds at about 55 knots on June 1, but on the 2d and 3d the wind force dropped to 35–40 knots. Northward movement was resumed on June 4 and maximum development was reached on the 5th when aircraft estimated highest winds to be 60 to 65 knots in brief squalls northeast of the center near 29° N., 83° to 85° W. Central pressure at this time was about 997 mb. (29.44 inches). During the night of the 5th, the storm again lost force and when it moved inland a short distance west of Panama City, Fla., about noon of the 6th, strongest winds were around 35 to 40 knots. There was no damage of consequence in Florida.

This storm gave heavy flooding rains in western Cuba and unconfirmed press reports indicate there were several deaths from drowning. In Cuba, the rains broke a severe drought of nine months duration, and in Florida, the rains were beneficial in breaking a dry spell of much shorter length.

Barbara, August 12–15.—The second storm developed during the night of August 11 northeast of the Bahama Islands from a weak easterly wave that had moved westward over the Atlantic during several days preceding. On the morning of the 12th, reconnaissance aircraft located the center in the formative stages near 29° N., 76° W.; it was moving northward. Strongest winds were about 75 m. p. h. on the northeast side at this time, but the

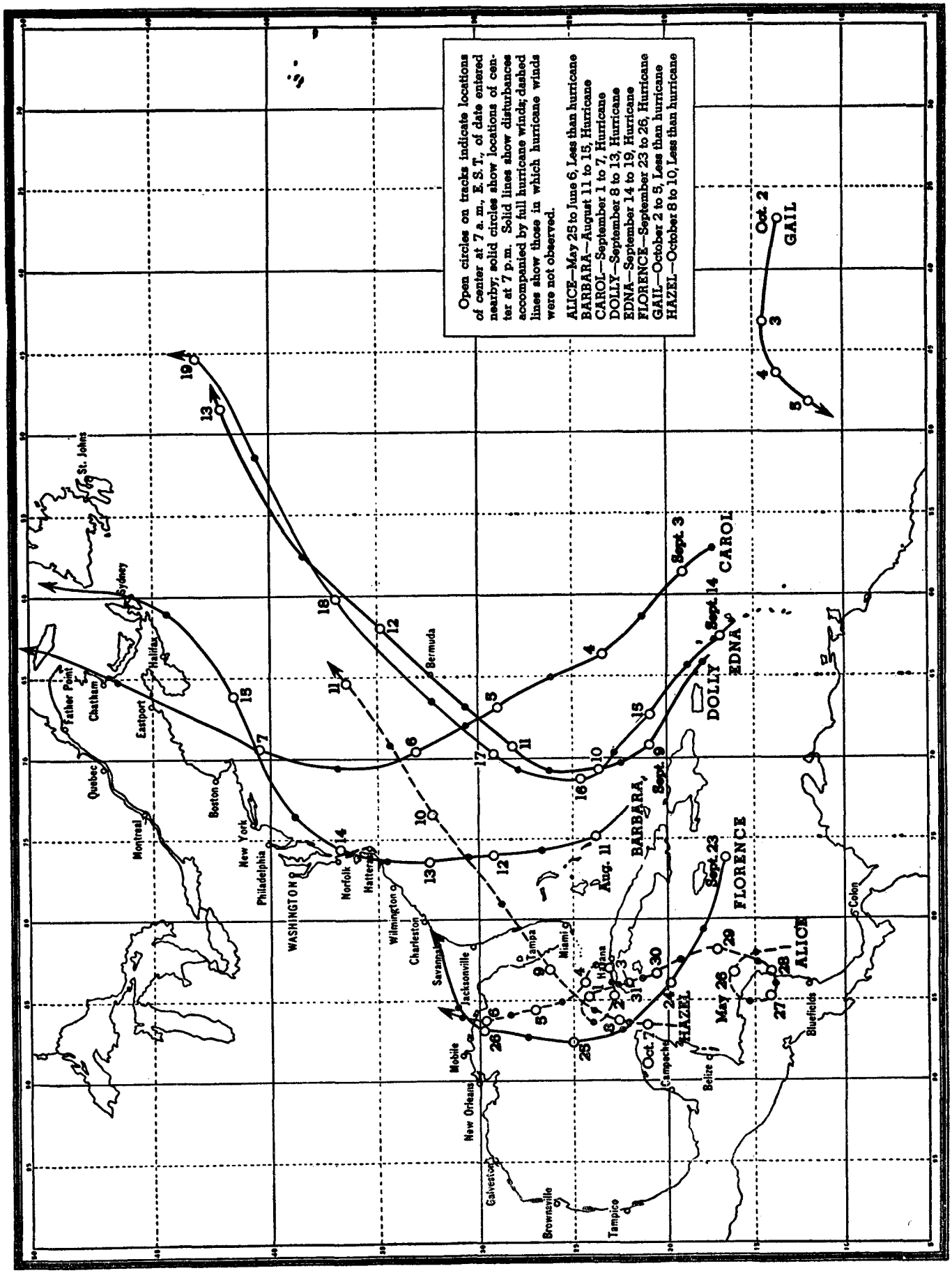

FIGURE 1.—Tracks of hurricanes which occurred during 1953.

southwest quadrant was weak and open. During the 12th and 13th, winds increased slowly in force and completed a circular organization; the strongest winds, estimated at slightly over 100 m. p. h., were observed by aircraft about 120 miles south of Cape Hatteras. The center passed over the North Carolina Capes section during the night of August 13 attended by winds of 90 to 100 m. p. h. and lowest pressure about 29.15 inches. One death and approximately $1,000,000 in property damage were reported. After leaving the North Carolina Capes, the center moved northeastward to the Canadian Maritime Provinces on the 15th. A detailed account of this storm has been given by James and Thomas [1].

Carol, September 1–7.—The wave from which Carol formed was traced from the coast of Africa, where it was first noted on August 28, and on the 29th it passed the Cape Verde Islands moving westward. Signs of development began to appear on August 31, and on September 1 confirmation that a hurricane had formed was received from the S. S. *Umatilla* which reported force 11 to 12 north-northeast winds, very high seas, and rapidly falling pressure at 14.3° N., 48.5° W. This storm became the most severe hurricane of the season during the next few days as it moved on a west-northwest course, with aircraft reporting 130+ knot winds and minimum pressure 930 mb. (27.45 inches) on September 3 and 4. By September 6, when the hurricane passed about midway between Cape Hatteras and Bermuda, there were signs of weakening, and thereafter it slowly lost force, but was still about hurricane strength when it passed over Nova Scotia and New Brunswick on the 7th.

Dolly, September 8–13.—An easterly wave moved into the eastern Caribbean Sea on September 8 and caused heavy rainfall in the Virgin Islands and Puerto Rico, but it was the 9th before aircraft located a developing center in the wave near 21° N., 69° W. The center developed slowly and curved toward a northerly course during the 9th and 10th, reaching maximum development on the 10th when aircraft estimated top wind speed at near 100 knots. Thereafter the storm moved northeastward with waning force, passed over Bermuda the night of the 11th, where only gale winds were experienced, and thence moved rapidly northeastward over the Atlantic during the 12th and 13th beyond the range of reconnaissance aircraft. Little or no damage was caused at Bermuda. This was one of the season's storms that lost force rapidly without apparent cause, after attaining considerable intensity.

Edna, September 14–19.—Following closely behind Dolly, Edna began forming in a squally wave over and to the north of the Leeward Islands on September 14. On the morning of the 15th the center was first definitely located at about 20° N., 66° W. Thereafter the storm strengthened rapidly to a hurricane with strongest wind about 125 m. p. h. and followed a broad curve to north and northeast that very closely paralleled the course taken by Dolly a few days earlier. The center passed a short distance to the north of Bermuda during the evening of the 17th and gave winds in gusts up to 120 m. p. h. which caused considerable damage on the Island.

Florence, September 23–26.—The easterly wave from which Florence formed was traced from the Lesser Antilles westward through the Caribbean Sea on the 21st and 22d, but the first signs of the beginning of intensification were noted on September 23 about 100 miles southeast of Jamaica. At this time squalliness was observed to be increasing, but no definite center could be located until the forenoon of the 24th when the storm was approaching the Yucatan Channel. It increased to hurricane strength while passing through the Channel into the Gulf of Mexico during the afternoon, and reached its greatest force on the 25th as it curved northward. Aircraft estimated top winds of 110 to 120 knots, and lowest pressure was given at 968 mb. (28.65 inches) on the 25th, but it is thought that these estimates of wind may have been somewhat too high since nearby ship reports did not appear to confirm them. In any case, when the center reached the northwest Florida coast near midday of the 26th, the strongest wind reported was about 80 to 90 m. p. h. However, the center passed inland over a sparsely settled area between Ft. Walton and Panama City and winds might have been a little higher in this area where no measuring equipment is located. This may also account for the relatively light damage which was estimated at around $200,000 by the New Orleans Forecast Center. The Red Cross reported 421 houses damaged, but only 3 destroyed. There was also some crop damage from wind and heavy rain in a few counties of northwestern Florida and extreme southeastern Alabama, but the storm lost force rapidly after passing inland. There were no deaths or injuries, thanks to the excellent warning service which provided ample time for evacuation of coastal danger areas.

Gail, October 2–4.—The intensification of an easterly wave was noted on the morning of October 2 near 14° N., 37° W. and on the morning of the 3d, the *S. S. Thorbjorg* passed near the center 400 miles farther west. At 1200 GMT this vessel reported westerly winds at 44 knots and lowest pressure 29.12 inches with rough seas. Maximum winds were estimated at 75 to 80 m. p. h. at the time the ship passed near the center. This observation was made near 15.5° N., 43° W. No definite fixes were obtained thereafter.

Hazel, October 8–10.—The last storm of the season was born in the Yucatan Channel on October 8. It moved northeastward and increased to almost hurricane force by the time it moved into Florida just north of Ft. Myers about 1100 EST of the 9th. Winds up to 60 to 70 m. p. h. attended the storm's northeastward transit of Florida. It passed into the Atlantic near Vero Beach at about 1700 EST of the 9th. Damage was light to moderate, as would be expected from winds of only gale force, and totaled $250,000 or slightly more. One, and possibly two, small tornadoes occurred on the storm's leading edge as it crossed

Florida; one occurred at St. James City on Pine Island west of Ft. Myers and traced a path 3 or 4 miles in length destroying several houses; there were indications of another tornado near Okeechobee City where a hangar was badly damaged and an airplane wrecked. The lowest pressure, 987 mb. (29.15 inches), and also the strongest wind gusts, 80 m. p. h., were reported from Okeechobee City. After leaving Florida, the storm moved rapidly northeastward and lost force, becoming extra-tropical by the time it reached 35° N.

The rainfall associated with Hazel added to the flood conditions existing from previous rains in several of the river valleys of Florida, as well as some of the Everglades area. The overall flood damage is estimated at 9 to 10 million dollars, but it is not possible to separate the flood damage caused by Hazel from that caused by the other rains. The upper St. Johns River reached the highest stage ever known, exceeding by 1½ feet the previous record and covering 6 miles of the highway between Melbourne and Kissimmee.

REFERENCE

1. R. P. James and C. F. Thomas, "Hurricane Barbara, 1953," *Monthly Weather Review*, vol. 81, No. 8, August 1953, pp. 255–265.